

REMARKS

I. Status of the Claims

Claims 35-51 and 66-68 are pending in this Application, and stand rejected. No amendments are made at this time.

II. Interview

Applicants respectfully thank the Examiner for his time during the personal interview on September 20, 2005. In that interview Applicants discussed the correct standard for a showing of unexpected results under M.P.E.P. § 2131.03(II). The Examiner indicated that Applicants should submit these arguments in writing for further consideration. Thus, Applicants' remarks will clarify and expand upon the arguments discussed during the interview.

III. Rejection Under Section 102(b)

In the Office Action dated June 17, 2005, the Examiner maintains the rejections of claims 35-51 and 66-68 under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 4,861,842 to Cohen *et al.* ("Cohen"). Office Action at 2. Specifically, the Examiner asserts that "the cure systems [of Cohen] are taught as comprising 0.5 to 2.0 phr sulfonamide accelerators, 1.0 to 5.0 phr of zinc oxide or zinc stearate and 0.75 to 3.0 phr sulfur-vulcanizing agents." *Id.*

Applicants respectfully traverse the rejection for at least the reasons of record and for the following additional reasons.

A. Independent Claims 35 and 45

A claim is anticipated only if **each and every element as set forth in the claim** is found . . . in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of*

California, 814 F.2d 628, 631 (Fed. Cir. 1987) (emphasis added). Further, “[t]he identical invention must be shown in as complete detail as is contained in the . . . claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). See also M.P.E.P. § 2131. Additionally, a compound or composition of matter can only be anticipated if the disclosure of a single reference places the compound or composition in possession of the public. See *In re Brown*, 329 F.2d 1006, 1011 (C.C.P.A. 1964). The reference must “clearly and unequivocally disclose the claimed compound or direct those skilled in the art to the compound without any need for picking, choosing, and combining various disclosures” *In re Arkley*, 455 F.2d 586, 587 (C.C.P.A. 1972).

Cohen does not teach each and every element as set forth in the present claims. Among other things, Cohen does not teach “an effective amount of at least one activator, expressed as equivalents of zinc oxide, **less than or equal to 0.6% by weight based on the total weight of the tread.**” See claims 35 and 45. As the Examiner has acknowledged, Cohen teaches “1.0 to 5.0 phr of zinc oxide or zinc stearate.” Office Action at 2 (citing Cohen abstract). While Cohen does not disclose how much should be found in the tread, the Examiner continues to argue that “[t]hese amounts are seen as falling within applicants’ limitation when adjusted for the total weight of the tire tread.” *Id.*

1. **There is No Evidence that Cohen’s disclosure of “1.0 to 5.0 phr of zinc oxide or zinc stearate,” touches the presently claimed range.**

Applicants maintain that the Examiner’s argument is merely speculation regarding what a person of ordinary skill in the art would understand Cohen to teach. In order to show anticipation of the claimed range, Applicants understand that the

Examiner has relied upon the general disclosure from the Summary of the Invention (col. 2, lines 64-66) as applied to Examples 1-6 (cols. 5-6). Further, Applicants understand that the Examiner has asserted that if the minimum amount of 1.0 phr zinc oxide were used instead of the 3.0 phr of Examples 1-6, then a value of about 0.49 is determinable.

If Applicants are correct in their understanding, then Applicants maintain that Cohen does not “clearly and unequivocally disclose the claimed compound or direct those skilled in the art to the compound without any need for picking, choosing, and combining various disclosures” *In re Arkley*, 455 F.2d 586, 587 (C.C.P.A. 1972). Cohen teaches that a person of ordinary skill must balance a multitude of components to achieve a desirable cure system. See, e.g., col. 2, lines 43-68. There is nothing in Cohen to suggest that all possible combinations of these components will result in a cure system nor that there is an expectation that one can reduce the level of zinc oxide in the exemplary formulations. It is particularly notable that the zinc oxide level for the Examples of Cohen are in the preferred range of 2.0 to 4.0 phr, whereas 1.0 phr is not specifically used.

2. Cohen fails to teach presently claimed range with sufficient specificity.

However, even if, **solely for the sake of argument**, Cohen’s disclosure of “1.0 to 5.0 phr of zinc oxide or zinc stearate,” touches the presently claimed range amount of “at least one activator, expressed as equivalents of zinc oxide, less than or equal to 0.6% by weight based on the total weight of the tread,” Cohen still does not anticipate

the present claims, because it does not disclose the claimed range with sufficient specificity.

The M.P.E.P. provides direction as to how to determine whether a prior art reference adequately discloses a range in order to be deemed anticipatory of that range. According to M.P.E.P. § 2131.03(II):

[w]hen the prior art disclosed a range which touches, overlaps or is within the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with 'sufficient specificity to constitute an anticipation under the statute.' . . . **If the claims are directed towards a narrow range, the reference teaches a broad range, and there is evidence of unexpected results within the claimed narrow range . . . it may be reasonable to conclude that the narrow range is not disclosed with 'sufficient specificity.'**

M.P.E.P. § 2131.03(II) (emphasis added). Applicants submit to the Examiner that, as demonstrated in the specification as filed, and reinforced by the comparative testing results in the Declaration under 37 C.F.R. § 1.132, submitted previously, Cohen does not anticipate the present claims according to M.P.E.P. § 2131.03.

Applicants have submitted additional experimental data above and beyond the data contained in the specification, to reinforce the original teachings of the specification. As shown in Tables IA, IB, and IC, of the Declaration, the three sets of Inventive and Comparative Compositions comprise the same ingredients in the same amount, except for the amount of activator expressed as equivalents of zinc oxide, which varied. The three sets of compositions vary based on the type of filler: 50% carbon black and 50% silica by weight of filler, 100% silica by weight of filler, and 100%

carbon black by weight of filler. See Declaration under 37 C.F.R. § 1.132 at ¶7 (previously submitted).

The inventive Compositions MMX06, MMX04, SIL06, SIL04, CB06, and CB04, possess all of the elements of independent claims 35 and 45, including at least one activator, expressed as equivalents of zinc oxide, less than or equal to 0.6% by weight based on the total weight of the tread. See Declaration under 37 C.F.R. § 1.132 at ¶9. The Comparative Compositions MMX22, MMX15, MMX10, SIL22, SIL15, SIL10, CB22, CB15, CB10 possess all of the elements of independent claims 35 and 4, except that the amount of activator is in accordance with Examples 1-8 of Cohen (U.S. Patent No. 4,861,842). See *id.* at ¶8.

As admitted by the Examiner, “the declaration would appear to indicate improved wear resistance for zinc oxide levels of 0.6 and 0.4.” Office Action at 2; see *also*, Declaration under 37 C.F.R. § 1.132 at ¶ 14 and Table II. In fact, the evidence shows that **the wear resistance improves as the amount of zinc oxide decreases**. *Id.* This improved performance is seen, while maintaining wet skid resistance and rolling resistance (which are related to the values of $\text{Tan}\delta$ at 0°C and 70°C respectively). See *id.* A person of ordinary skill in the art, prior to Applicants’ discovery, would have expected wear resistance results comparable to the Comparative Compositions and not expect improved wear resistance without compromising either wet skid resistance and/or rolling resistance. See *id.* at ¶15.

Thus, Applicants reiterate their argument that one of ordinary skill in the art would not consider the disclosure of Cohen to be of “sufficient specificity” to constitute anticipation of the claims because: (1) Cohen teaches a broad increasing range of 1.0

to 5.0 phr of zinc oxide or zinc stearate; (2) Cohen teaches a preference for levels of zinc oxide greater than the claimed range (col. 4, lines 36-37), (3) the examples of Cohen do not teach a composition with zinc oxide within the claimed range; and (4) one skilled in the art would not expect the superiority of the claimed compositions with the claimed range of at least one activator from Cohen's teachings. Accordingly, Cohen does not place the presently claimed composition in the possession of the public, and cannot be said to anticipate. See *In re Brown*, 329 F.2d 1006, 1011 (C.C.P.A. 1964).

In response to Applicants demonstration of unexpected results, the Examiner has contended that "these two data points alone are not sufficient to demonstrate unexpected results for the entirety of applicants['] claimed range." *Id.* Applicants respectfully disagree.

First, the Examiner has applied the incorrect line of analysis. There is no requirement to demonstrate unexpected results for the "entirety of the range" under M.P.E.P. § 2131.03, unlike when experimental results are offered to rebut a prima facie showing of obviousness. Rather, M.P.E.P. § 2131.03 expressly recites that if "there is evidence of unexpected results **within the claimed narrow range** . . . it may be reasonable to conclude that the narrow range is not disclosed with '**sufficient specificity**.'" (emphasis added). M.P.E.P. § 2131.03. M.P.E.P. § 2131.03 expressly likens the analysis to whether a species is clearly envisaged from a generic teaching, citing M.P.E.P. § 2131.02.

Second, the evidence of record establishes that "there is evidence of unexpected results **within the claimed narrow range** . . .," which is all that is required. In view of this evidence, a person of ordinary skill in the art would not understand (or envisage)

Cohen as disclosing the narrow, claimed range with its unexpected results. The Experimental Results submitted with the Declaration show unexpected results at 0.4% and 0.6% by weight of the tread, which bracket what Applicants' understand to be the lowest alleged value of Cohen. Yet nothing in Cohen suggests any appreciation of such unexpected results, such that a person of ordinary skill in the art would recognize that the range is disclosed with sufficient specificity. In fact, Cohen suggests the opposite by teaching both a preference for greater values, *i.e.*, 2.0 to 4.0 phr (col. 4, lines 36-37) and Examples disclosing amounts near 1.5% and near 2.2% by weight of the tread (cols. 5-9), whereas Applicants' data suggests that wear resistance improves as the level of zinc oxide is reduced. See Table II of Declaration.

Further, Applicants submit that a single point, 0.6% zinc oxide, which demonstrates unexpected results as compared to Cohen, should alone be enough to show that Cohen does not teach the claimed invention with sufficient specificity. Such zinc oxide levels and their effects on wear properties are not taught, disclosed or intimated at in Cohen.¹ Thus, the second data point only bolsters the unexpected showing of the first data point, and both reinforce the teaching of the present specification: improved wear properties are inversely related to zinc oxide values.

¹ As Applicants have previously pointed out to the Examiner, the specification of the present invention discloses several unexpected results, including at least: (a) tires with increased resistance to wear; (b) limiting of problems related to the use of polybutadiene in the polymer base of a rubber composition of a tire; (c) improved tire performance in terms of tear resistance; and (d) improved tire performance in terms of resistance to the chunking phenomenon.

The increased resistance to wear is accompanied by substantially unaltered values of rolling resistance and wet-skid resistance. See Specification, at p. 4/II. 23-29, p. 27/II. 11-20, p. 28/II. 21-31, p. 30/II. 1-10, and Tables II, IV, and VI. Rubber compositions showing this increased resistance to wear include those where the reinforcing filler is 100% silica (*id.*, Table II), 50% silica and 50% carbon black (*id.*, Table IV), and 100% carbon black (*id.*, Table VI).

(continued...)

Nevertheless, Applicants submit that the evidence of record, showing a trend toward improved wear with lower levels of zinc oxide, negates the Examiner's perceived need for additional data.

Thus, for at least the foregoing reasons, the Section 102(b) rejection of Claims 35 and 45 over Cohen is improper and Applicants respectfully request its withdrawal.

B. Dependent Claims 36-44, 46-51, and 66-68

Applicants submit that dependent claims 36-44, 46-51, and 66-68 also are patentable under 35 U.S.C. § 102 over Cohen, at least due to the direct or indirect dependency of claims 36-44 from independent claim 35, and the direct or indirect dependency of claims 46-51 and 66-68 from independent claim 45.

Thus, for at least the foregoing reasons, the Section 102(b) rejection of the dependent claims over Cohen is improper and Applicants request its withdrawal.

C. Claim Scope

In discussing the specification, claims, and Declaration submitted herewith, it is to be understood that Applicants are in no way intending to limit the scope of the claims to any exemplary embodiments described in the specification or abstract and/or shown in the drawings. Rather, Applicants believe that Applicants are entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

(...continued)

The performance of a tire of the invention can be optimized both in terms of tear resistance and resistance to the chunking phenomenon, particularly under severe-use conditions. (*Id.*, p. 5/II. 27-31).

CONCLUSION

In view of the foregoing remarks, Applicants respectfully request the reconsideration of this Application and the timely allowance of the pending claims.

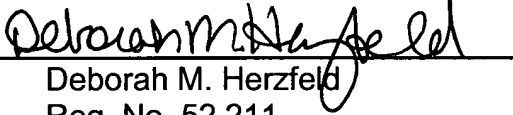
If the Examiner believes a telephone conference could be useful in resolving any of the outstanding issues, he is respectfully urged to contact Applicants' undersigned counsel at 202-408-4368.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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